

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. \_\_\_\_\_.  
FOR  
LIBERTY COMPOSTING, INC.  
FOR  
OPERATION  
LIBERTY COMPOSTING FACILITY  
KERN COUNTY

Compliance with this Monitoring and Reporting Program; Title 27, California Code of Regulations, Section 20005, et seq. (hereafter Title 27); and the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27 and/or Subtitle D (27 CCR §20005 et seq. and 40 CFR 258)*, dated April 2000, is ordered by Waste Discharge Requirements Order \_\_\_\_\_.

**A. REQUIRED MONITORING REPORTS**

<u>Report</u>	<u>Due</u>
1. Groundwater Monitoring (Section D.1)	<b>See Table I</b>
2. Annual Monitoring Summary Report (Order No. R5-2002-0172, E.6)	<b>Annually</b>
3. Surface Impoundment Monitoring (Section D.2)	<b>Annually</b>
4. Compost Temperature Monitoring (Section D.3)	<b>Semiannually</b>
5. Quantities (Section D.4)	<b>Semiannually</b>
6. Sludge Monitoring (Section D.5)	<b>Semiannually</b>
7. Soil Profile Monitoring (Section D.6)	<b>Annually</b>
8. Facility Monitoring (Section D.7)	<b>As stipulated</b>
9. Response to a Release (Standard Provisions and Reporting Requirements)	<b>As necessary</b>

## B. REPORTING

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required in Order \_\_\_\_\_ and the Standard Provisions and Reporting Requirements. Reports which do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the waste discharge requirements. In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, constituents, concentrations, and units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly compliance with waste discharge requirements or the lack thereof. Data shall also be submitted in a digital format acceptable to the Executive Officer.

Each monitoring report shall include a compliance evaluation summary as specified in "E. Reporting Requirements", in this Monitoring and Reporting Program.

Field and laboratory tests shall be reported in each monitoring report. Monthly, quarterly, semiannual, and annual monitoring reports shall be submitted to the Central Valley Water Board in accordance with the following schedule for the calendar period in which samples were taken or observations made.

<u>Sampling Frequency</u>	<u>Reporting Frequency</u>	<u>Reporting Periods End</u>	<u>Report Date Due</u>
Daily/Monthly	Semiannually	30 June	<b>31 July</b>
		31 December	<b>31 January</b>
Quarterly	Semiannually	31 March	<b>31 July</b>
		30 June	<b>31 July</b>
		30 September	<b>31 January</b>
		31 December	<b>31 January</b>
Semiannually	Semiannually	30 June	<b>31 July</b>
		31 December	<b>31 January</b>
Annually	Annually	31 December	<b>31 January</b>

The Discharger shall submit an **Annual Monitoring Summary Report** to the Central Valley Water Board covering the previous monitoring year. The annual report shall contain the information specified in "E. Reporting Requirements", in this Monitoring and Reporting Program, and a discussion of compliance with the waste discharge requirements and the Water Quality Protection Standard.

The results of **all monitoring** conducted at the site shall be reported to the Central Valley Water Board in accordance with the reporting schedule above for the calendar period in which samples were taken or observations made.

## **C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD**

### **1. Water Quality Protection Standard Report**

For each waste management unit (Unit), the Water Quality Protection Standard shall consist of all constituents of concern, the concentration limit for each constituent of concern, the point of compliance, and all water quality monitoring points for each monitored medium. The Water Quality Protection Standard, or any modification thereto, shall be submitted in a report for review and approval.

The report shall:

- a. Identify **all distinct bodies of surface and ground water** that could be affected in the event of a release from a Unit or portion of a Unit. This list shall include at least the uppermost aquifer and any permanent or ephemeral zones of perched groundwater underlying the facility.
- b. Include a map showing the monitoring points and background monitoring points for the surface water monitoring program, groundwater monitoring program, and the unsaturated zone monitoring program. The map shall include the point of compliance in accordance with §20405 of Title 27.
- c. Evaluate the perennial direction(s) of groundwater movement within the uppermost groundwater zone(s).

The Water Quality Protection Standard shall be certified by a California-registered civil engineer or professional geologist as meeting the requirements of Title 27. If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the site, the Discharger may request modification of the Water Quality Protection Standard.

## **2. Constituents of Concern**

The constituents of concern include all the waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the Unit. The constituents of concern for all Units at the facility are those listed in Table I. The Discharger shall monitor all constituents of concern every five years, or more frequently as required in accordance with a Corrective Action Program.

### **a. Monitoring Parameters**

Monitoring parameters are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a Unit. The monitoring parameters for all Units are those listed in Table I for the specified monitored medium.

## **3. Concentration Limits**

The concentration limits for each constituent of concern are as follows:

- a. For anthropogenic (not naturally occurring) constituents, which have no natural, and therefore, no background values, the concentration limit (water quality protection standard) shall be the detection limit of the analytical method(s) used.
- b. For each naturally occurring waste constituent of concern, the concentration limit (applicable suite of background data) for that constituent shall be determined utilizing the inter-well tolerance limit method and groundwater statistical analysis computer program (such as Sanitas<sup>TM</sup>). The upper tolerance limit shall be calculated from inorganic monitoring data obtained from the background monitoring well(s) and the concentrations of inorganic constituents from downgradient compliance wells compared to the upper tolerance levels. The analytical data from each sampling event shall be used to update the tolerance limits.

Currently established concentration limits for naturally occurring constituents of concern are listed in Table II.

#### **4. Point of Compliance**

The point of compliance for the water quality protection standard at each Unit is a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit.

#### **5. Compliance Period**

The compliance period for the Unit, as defined by Title 27, shall be the number of years equal to the active life of the Unit plus the closure period. The compliance period for the Unit is 27 years. The compliance period is the minimum period during which the Discharger shall conduct a water quality monitoring program subsequent to a release from the Unit. The compliance period shall begin anew each time the Discharger initiates an evaluation monitoring program.

### **D. MONITORING**

The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater, surface water, and the unsaturated zone. Detection monitoring for a new Unit shall be installed, operational, and one year of monitoring data collected **prior to** the discharge of wastes. All monitoring shall be conducted in accordance with a Sample Collection and Analysis Plan, which includes quality assurance/quality control standards, that is acceptable to the Executive Officer.

All point of compliance monitoring wells established for the detection monitoring program shall constitute the monitoring points for the groundwater Water Quality Protection Standard. All detection groundwater monitoring wells shall be sampled and analyzed for monitoring parameters and constituents of concern as indicated and listed in Table I.

Method detection limits and practical quantitation limits shall be reported. All peaks shall be reported, including those which cannot be quantified and/or specifically identified. Metals shall be analyzed in accordance with the methods listed in Table I.

The Discharger may use alternative analytical test methods, including new USEPA approved methods, provided the methods have method detection limits equal to or lower than the analytical methods specified in this Monitoring and Reporting Program.

#### **1. Groundwater**

The Discharger shall operate and maintain a groundwater detection monitoring system that complies with the applicable provisions of Title 27 CCR Section 20415 and Section 20420 in accordance with an approved Detection Monitoring Program. The detection monitoring system shall be certified by a California-licensed professional engineer or geologist as meeting the requirements of Title 27. The Discharger shall collect, preserve, and transport groundwater samples in accordance with the approved Sample Collection and Analysis Plan.

The Discharger shall determine the groundwater flow rate and direction in the uppermost aquifer and in any zones of perched water and in any additional zone of saturation monitored pursuant to this Monitoring and Reporting Program, and report the results semiannually, including the times of highest and lowest elevations of the water levels in the wells.

Hydrographs of each well shall be submitted showing the elevation of groundwater with respect to the elevations of the top and bottom of the screened interval and the elevation of the pump intake. Hydrographs of each well shall be prepared quarterly and submitted annually.

Groundwater samples shall be collected from the point-of-compliance wells, background wells, and any additional wells added as part of the approved groundwater monitoring system. Samples shall be collected and analyzed for the monitoring parameters in accordance with the methods and frequency specified in Table I.

The monitoring parameters shall also be evaluated each reporting period with regards to the cation/anion balance, and the results shall be graphically presented using a Stiff diagram, a Piper graph, or a Schoeller plot. Samples for the constituents of concern specified in Table I shall be collected and analyzed in accordance with the methods where listed in Table I.

## **2. Surface Impoundment Monitoring**

Water in the storm water surface impoundments collected as a result of precipitation runoff shall be sampled and analyzed semiannually for total concentrations of metals listed in Title 22 CCR §66261.24(a)(2)(A).

The freeboard on the storm water surface impoundments shall be measured **monthly** from April through September and **weekly** from November through April. Measurements shall be to the nearest one-tenth of a foot. Permanent markers shall be placed in each surface impoundment with calibrations

indicating the water level at design capacity and available operational freeboard. This information shall be **reported annually**.

### 3. Compost Temperature Monitoring

Windrow temperatures shall be measured and recorded on a daily basis. Temperature monitoring will be done in accordance with United States Environmental Protection Agency (USEPA) and California Integrated Waste Management Board (CIWMB) composting guidelines and requirements.

The following information shall be reported **Semiannually**:

<u>Constituent</u>	<u>Units</u>	<u>Monitoring Frequency</u>
Windrow Temperatures	°C	Daily <sup>1</sup>
Length of Windrow	Feet	Daily <sup>1</sup>

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1. Each operating day, but not less than 5 days per calendar week.

### 4. Quantities

Quantities of the following shall be reported **semiannually**:

<u>Constituent</u>	<u>Units</u>	<u>Monitoring Frequency</u>
Sludge Received	Tons (wet)	Monthly
Bulking Agents Received	Tons (wet)	Monthly
Exceptional Quality Compost Shipped Off-Site <sup>1</sup>	Tons (wet)	Monthly
Precipitation	Inches <sup>2</sup>	Monthly
Liquid Biosolids Received	Tons (wet)	Monthly
Organic Liquids	Tons <sup>3</sup>	Monthly

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1. Information including the name of the Discharger, and amount (tons) shipped. These records are to be maintained by San Joaquin Composting, Inc., and made available for inspection by staff at the offices of Liberty Composting, Inc.

2. Based on measurements recorded at the nearest rain gauging station operated by a governmental entity.

3. Based on approximately 7.4 gallons/pound.

### 5. Sludge Monitoring

For each source of municipal sludge received and for each load check performed, the Discharger shall provide analytical results for the following

constituents:

Total Kjeldahl Nitrogen

Nitrogen

Nitrates

Title 22, CCR, Priority Pollutant Metals<sup>1</sup>

Total Dissolved Solids

Percent Solids

pH

Total Coliform Organism

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1. Soluble concentrations using the Waste Extraction Test (WET)

For each source of municipal sludge, the above analyses shall be performed at least on a semi-annual basis, and **reported semiannually**. Accompanying the analytical results shall be verification of sludge as nonhazardous in accordance with Title 22, California Code of Regulations (CCR), Division 4.5, Chapter 11, Article 3, §66261.24(a)(2)(A) Table II (Priority Pollutant Metals), or by other tests approved by Central Valley Water Board staff. This verification shall include a statement from the generator stating that sludge has been tested and meets criteria for nonhazardous sludge specified in Title 22, CCR, Division 4.5, Chapter 11, Article 3, §66261.24(a)(2)(A) Table II (Priority Pollutant Metals).

## 6. Soil Profile Monitoring

Soil samples shall be collected annually at all of the boring locations indicated in the Soil Profile Monitoring Plan, and **reported in the annual report**. Soil samples shall be collected at a depth of six (6) inches to one (1) foot below ground surface at the windrow locations. Samples shall be analyzed for moisture content, pH, and total concentrations of priority pollutant metals, as defined by Title 22 CCR §66261.24.

## 7. Facility Monitoring

### a. Facility Inspection

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess damage to the drainage control system, groundwater monitoring equipment (including wells, etc.), and shall include the Standard Observations contained in Section E.4.f., of this Monitoring and Reporting Program. Any necessary construction, maintenance, or repairs shall be completed by **31 October**. By **15 November** of each year, the Discharger shall submit an Annual Report describing the results of the inspection and any repair measures implemented, including photographs of the problem and the repairs.

### b. Storm Events

The Discharger shall inspect all precipitation, diversion, and drainage facilities for damage **within 7 days** following *major storm events* (i.e., a storm that causes continuous runoff for at least one hour). Necessary repairs shall be completed **within 30 days** of the inspection. The Discharger shall report any damage and subsequent repairs **within 45 days** of completion of the repairs, including photographs of the problem and the repairs.

## E. REPORTING REQUIREMENTS

1. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained throughout the life of the facility including the postclosure period.

Such legible records shall show the following for each sample:

- a. Sample identification and the monitoring point or background monitoring point from which it was taken, along with the identity of the individual who obtained the sample;
- b. Date, time, and method of sampling;

- c. Date and time that analyses were started and completed, and the name of the personnel and laboratory performing each analysis;
  - d. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
  - e. Calculation of results; and
  - f. Results of analyses, and the MDL and PQL for each analysis.
2. A transmittal letter explaining the essential points shall accompany each report. At a minimum, the transmittal letter shall identify any violations found since the last report was submitted, and if the violations were corrected. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter. The transmittal letter shall also state that a discussion of any violations found since the last report was submitted, and a description of the actions taken or planned for correcting those violations, including any references to previously submitted time schedules contained in the accompanying report.
3. The Discharger shall establish and maintain an approved Sample Collection and Analysis Plan. The Sample Collection and Analysis Plan shall at a minimum include:
- a. Sample collection procedures describing purging techniques, sampling equipment, and decontamination of sampling equipment;
  - b. Sample preservation information and shipment procedures;
  - c. Sample analytical methods and procedures;
  - d. Sample quality assurance/quality control (QA/QC) procedures; and
  - e. Chain of Custody control.
4. Each monitoring report shall include a compliance evaluation summary. The summary shall at a minimum include:
- a. For each monitoring point and background monitoring point addressed by the report, a description of:
    - 1) The time of water level measurement;
    - 2) The type of pump - or other device - used for purging and the elevation of the pump intake relative to the elevation of the screened interval;

- 3) The method of purging (the pumping rate; the equipment and methods used to monitor field pH, temperature, and conductivity during purging; the calibration of the field equipment; results of the pH, temperature, conductivity, and turbidity testing; and the method of disposing of the purge water) to remove all portions of the water that was in the well bore before the sample was taken;
  - 4) The type of pump - or other device - used for sampling, if different than the pump or device used for purging; and
  - 5) A statement that the sampling procedure was conducted in accordance with the approved Sample Collection and Analysis Plan.
- b. A map or aerial photograph showing the locations of observation stations, monitoring points, and background monitoring points.
  - c. For each groundwater body, a description and graphical presentation of the gradient and direction of groundwater flow under/around the Unit(s), and the groundwater flow rate, based upon water level elevations taken prior to the collection of the water quality data submitted in the report.
  - d. Laboratory statements of results of all analyses evaluating compliance with requirements.
  - e. An evaluation of the effectiveness of leachate monitoring and of the runoff/runon control facilities.
  - f. A summary and certification of completion of all **Standard Observations** for the Unit and for the perimeter of the Unit. Standard observations for the Unit shall be conducted **monthly** during the wet season (1 October to 30 April) and **quarterly** during the dry season (1 May to 30 September). The Standard Observations shall include:
    - 1) For the Unit(s):
      - a) Evidence of ponded water at any point on the facility (show affected area on map);
      - b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and
      - c) Evidence of erosion.
    - 2) Along the perimeter of the Unit(s):

- a) Evidence of liquid leaving or entering the Unit, estimated size of affected area, and flow rate (show affected area on map);
  - b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and
  - c) Evidence of erosion.
- 5. The Discharger shall report by telephone any seepage from the Unit(s) **immediately** after it is discovered. A written report shall be filed with the Central Valley Water Board **within seven days**, containing at least the following information:
  - a. A map showing the location(s) of seepage;
  - b. An estimate of the flow rate;
  - c. A description of the nature of the discharge (e.g., all pertinent observations and analyses);
  - d. Verification that samples have been submitted for analyses of the monitoring parameters and constituents of concern listed in Table I of this Monitoring and Reporting Program, and an estimated date that the results will be submitted to the Central Valley Water Board; and
  - e. Corrective measures underway or proposed, and corresponding time schedule.
- 6. The Discharger shall submit an **Annual Monitoring Summary Report** to the Central Valley Water Board covering the reporting period of the previous monitoring year. This report shall contain:
  - a. All monitoring parameters and constituents of concern shall be graphed so as to show historical trends at each monitoring point and background monitoring point, for all samples taken within at least the previous five calendar years. Each such graph shall plot the concentration of one or more constituents for the period of record for a given monitoring point or background monitoring point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. Graphical analysis of monitoring data may be used to provide significant evidence of a release.
  - b. All historical monitoring data, including data for the previous year, shall be submitted in tabular form as well as in a digital file format. The Central Valley Water Board regards the submittal of data in hard copy and in digital format

as "...the form necessary for..." statistical analysis [Title 27 CCR Section 20420(h)], in that this facilitates periodic review by the Central Valley Water Board.

- c. A comprehensive discussion of the compliance record, and the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements.
- d. A written summary of the monitoring results, indicating any changes made or observed since the previous annual report.

The Discharger shall implement the above monitoring program effective on the date below.

Ordered by: \_\_\_\_\_  
PAMELA C. CREEDON, Executive Officer

\_\_\_\_\_  
(Date)

REH: 10/30/08

**TABLE I**  
**GROUNDWATER DETECTION MONITORING PROGRAM**

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
<b>Field Parameters</b>		
Groundwater Elevation	Ft. & hundredths, M.S.L. <sup>1</sup>	Quarterly
Temperature	°C <sup>2</sup>	Semiannually
Electrical Conductivity	µmhos/cm <sup>3</sup>	Semiannually
pH	pH units	Semiannually
Turbidity	NTU <sup>4</sup>	Semiannually
<b>Monitoring Parameters</b>		
Total Dissolved Solids (TDS)	mg/L <sup>5</sup>	Semiannually
Nitrate (NO <sub>3</sub> )	mg/L	Semiannually
Nitrate as Nitrogen (NO <sub>3</sub> -N)	mg/L	Semiannually
Nitrite (NO <sub>2</sub> -N)	mg/L	Semiannually
Total Kjeldahl Nitrogen	mg/L	Semiannually
Total Nitrogen	mg/L	Semiannually
Ammonia (NH <sub>3</sub> -N)	mg/L	Semiannually
Chloride	mg/L	Semiannually
Carbonate	mg/L	Semiannually
Bicarbonate	mg/L	Semiannually
Phosphorous	mg/L	Semiannually
Sulfate	mg/L	Semiannually
Calcium	mg/L	Semiannually
Magnesium	mg/L	Semiannually
Potassium	mg/L	Semiannually
Sodium	mg/L	Semiannually

**TABLE I  
 (Continued)**

**GROUNDWATER DETECTION MONITORING PROGRAM**

**Constituents of Concern**

<u><b>Parameter</b></u>	<u><b>USEPA Method</b></u>	<u><b>Units</b></u>	<u><b>Frequency</b></u>
Total Organic Carbon		mg/L	Semiannually
<u><b>Inorganics (dissolved)</b></u>			
Aluminum	6010	mg/L	Semiannually
Antimony	6010	mg/L	Semiannually
Barium	6010	mg/L	Semiannually
Beryllium	6010	mg/l	Semiannually
Boron	6010	mg/L	Semiannually
Chromium	6010	mg/L	Semiannually
Cobalt	6010	mg/L	Semiannually
Copper	6010	mg/L	Semiannually
Manganese	6010	mg/L	Semiannually
Silver	6010	mg/L	Semiannually
Vanadium	6010	mg/L	Semiannually
Zinc	6010	mg/L	Semiannually
Arsenic	7062	mg/L	Semiannually
Cadmium	7131A	mg/L	Semiannually
Lead	7421	mg/L	Semiannually
Mercury	7470A	mg/L	Semiannually
Nickel	7521	mg/L	Semiannually
Selenium	7742	mg/L	Semiannually
Thallium	7841	mg/L	Semiannually
Cyanide	9010	mg/L	Semiannually
Sulfide	9030	mg/L	Semiannually

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1. Feet and hundredths of a foot above mean sea level.
  2. Degrees Celsius.
  3. Micromhos per centimeter.
  4. Nephelometric turbidity units.
  5. Milligrams per liter.

**TABLE II**

**WATER QUALITY PROTECTION STANDARD CONCENTRATION LIMITS**

<b><u>Parameter</u></b>	<b><u>Units</u></b>	<b><u>Concentration Limit</u></b>
Total Dissolved Solids (TDS)	mg/L <sup>1</sup>	500
Electrical Conductivity	µmhos/cm <sup>2</sup>	900
pH	pH units	6.5-8.5
Turbidity	NTU <sup>3</sup>	0.3
Chloride	mg/L	250
Sulfate	mg/L	250
Nitrate (NO <sub>3</sub> )	mg/L	45
Nitrate as Nitrogen (NO <sub>3</sub> -N)	mg/L	10
Nitrite (NO <sub>2</sub> -N)	mg/L	1.0
Total Kjeldahl Nitrogen	mg/L	MDL <sup>4</sup>
Alkalinity	mg/l	MDL
Bicarbonate	mg/L	MDL
Carbonate	mg/L	MDL
Calcium	mg/L	MDL
Magnesium	mg/L	MDL
Potassium	mg/L	MDL
Sodium	mg/L	MDL
Silica	mg/l	MDL
Phosphorous	mg/L	0.0001
Fluoride	mg/L	1
Aluminum	µg/L <sup>5</sup>	200
Ammonia (NH <sub>3</sub> -N)	µg/L	500
Antimony	µg/L	6
Barium	µg/L	1000
Beryllium	µg/l	4
Boron	µg/l	630
Cadmium	µg/L	0.07
Chromium	µg/L	50
Cobalt	µg/L	50
Copper	µg/L	170
Silver	µg/L	100
Vanadium	µg/L	63
Zinc	µg/L	2000
Iron	µg/L	300

**TABLE II  
(Continued)**

**WATER QUALITY PROTECTION STANDARD CONCENTRATION LIMITS**

<b><u>Parameter</u></b>	<b><u>Units</u></b>	<b><u>Concentration Limit</u></b>
Manganese	µg/L	50
Arsenic	µg/L	2.1
Lead	µg/L	2
Mercury	µg/L	1.2
Nickel	µg/L	12
Selenium	µg/L	20
Thallium	µg/L	0.1
Cyanide	µg/L	140
Sulfide	µg/L	MDL

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1. Milligrams per liter.
  2. Micromhos per centimeter.
  3. Nephelometric turbidity units.
  4. Method Detection Limit
  5. Micrograms per liter